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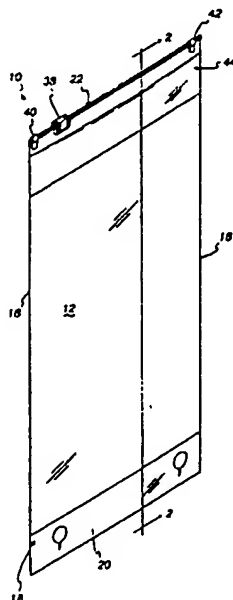
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[Continued on next page]

(54) Title: RECLOSABLE BAG WITH TOP GUSSET



(57) Abstract: A reclosable plastic package comprises first and second opposing body panels joined to each other along a pair of sides. Opposing top and bottom portions extend between the pair of sides. The package is provided with a reclosable fastener extending along the top portion. The fastener includes first and second opposing tracks including respective first and second profiles. The first and second profiles are adapted to releasably interlock with each other. The top portion of the package includes a top gusset connecting the first track to the first body panel. The top gusset includes a pair of opposing gusset panels joined to each other at their lower ends along a fold line. One of the gusset panels extends downward from the first track, while the other of the gusset panels extends downward from the first body panel. In response to filling the package with a bulky food product such as bagels or a loaf of bread, the top gusset expands. The expanded top gusset allows the package to easily accommodate the bulky food product and, at the same time, provides a display area that can carry graphics for merchandising the food product in the package.

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## RECLOSABLE BAG WITH TOP GUSSET

### FIELD OF THE INVENTION

The present invention relates generally to reclosable plastic packages and, more particularly, relates to a reclosable plastic package having a top gusset that expands in response to filling the package with a bulky food product such as bagels or a loaf of bread.

- 5 The expanded top gusset allows the package to easily accommodate the bulky food product and, at the same time, provides a display area that can carry graphics for merchandising the food product in the package.

### BACKGROUND OF THE INVENTION

- A typical reclosable package includes first and second opposing body panels joined to each other along a pair of sides and a bottom bridging the pair of sides. A reclosable fastener extends along a package top disposed opposite the bottom. The fastener is used to open and close the package top and thereby gain access to a food product contained in the package. To operate the fastener, the package may be provided with a slider mounted to the fastener.

- If reclosable packages of the foregoing type are to be prepackaged with a bulky food product such as bagels or a loaf of bread, the filled packages are typically sold in a store by laying them flat on a store shelf with one of the body panels contacting the shelf and the fastener facing outward toward the consumer. To assist in merchandising the food product contained in the package, graphics may be applied to the body panels proximate the fastener. A drawback of such packages, however, is that the fastener divides the graphics and thereby limits their effectiveness in merchandising the food product. In addition, when the food product is bulky, the package cannot easily accommodate the food product and can render it difficult to move the product into and out of the package via the opened fastener.

### SUMMARY OF THE INVENTION

- Accordingly, an object of the present invention is to provide a reclosable plastic package that allows the package to easily accommodate a bulky food product and, at the same time, provides a display area near the fastener that can carry graphics for merchandising the food product in the package.

- These and other objects are realized by providing a reclosable plastic package comprising first and second opposing body panels joined to each other along a pair of sides. Opposing top and bottom portions extend between the pair of sides, and the bottom portion

optionally includes a bottom gusset. The package is provided with a reclosable fastener extending along the top portion. The fastener includes first and second opposing tracks including respective first and second profiles. The first and second profiles are adapted to releasably interlock with each other.

5           The top portion of the package includes at least a first top gusset connecting the first track to the first body panel and optionally includes a second top gusset connecting the second track to the second body panel. In the absence of the second top gusset, the second track is directly connected to the second body panel. The first top gusset includes a pair of opposing gusset panels joined to each other at their lower ends along a fold line. One of the  
10           gusset panels extends downward from the first track, while the other of the gusset panels extends downward from the first body panel. The second top gusset, if present, has a similar construction. In response to filling the package with a bulky food product such as bagels or a loaf of bread, the top gusset(s) expands. The expanded top gusset allows the package to easily accommodate the bulky food product and, at the same time, provides a display area  
15           that can carry graphics for merchandising the food product in the package.

          The above summary of the present invention is not intended to represent each embodiment, or every aspect of the present invention. This is the purpose of the figures and detailed description which follow.

### BRIEF DESCRIPTION OF THE DRAWINGS

20           Other objects and advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings in which:

          FIG. 1 is an isometric view of a reclosable plastic package embodying the present invention;

          FIG. 2 is a sectional view taken generally along line 2-2 in FIG. 1;

25           FIGS. 3a-g are isometric views showing a method of making the reclosable package;

          FIG. 4 is an isometric view of the package being filled from the bottom with a bulky food product such as a loaf of bread;

          FIG. 5 is an isometric view of the filled package being sealed at its bottom;

          FIG. 6 is an isometric view of a plurality of filled and sealed packages sitting on a  
30           store shelf; and

          FIG. 7 is a sectional view similar to FIG. 2 but showing a reclosable plastic package in accordance with an alternative embodiment of the present invention.

While the invention is susceptible to various modifications and alternative forms, a specific embodiment thereof has been shown by way of example in the drawings and will herein be described in detail. It should be understood, however, that it is not intended to limit the invention to the particular forms disclosed, but on the contrary, the intention is to cover  
5 all modifications, equivalents, and alternatives falling within the spirit and scope of the invention as defined by the appended claims.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning now to the drawings, FIGS. 1 and 2 depict a reclosable plastic package 10 embodying the present invention. The package 10 includes first and second opposing body  
10 panels 12 and 14 joined to each other along a pair of sides 16. If the package 10 is to be prepackaged with a food product and then sold in a store, the body panels 12 and 14 are initially left unconnected at a bottom portion 18 bridging the pair of sides 16 to provide a fill opening between the body panels 12 and 14. To facilitate shipment of the package 10 to a food packager, the bottom portion 18 optionally includes a bottom header 20 with holes  
15 therein. The bottom header 20 allows the package 10 to be unitized with identical packages and mounted on dispensing posts in the form of wickets prior to shipment. The bottom header 20 includes slits adjacent to the respective holes to allow the package 10 to be torn away from the dispensing posts.

The package 10 is provided with a reclosable fastener 22 extending along a package  
20 top portion disposed opposite the bottom portion 18. The fastener 22 includes first and second opposing tracks 24 and 26. The first track 24 includes a groove-type female profile 28 and a first fin 30 extending downward from the female profile 28, while the second track 26 includes a rib-type male profile 32 and a second fin 34 extending downward from the male profile 32. The female and male profiles 28 and 32 are adapted to releasably interlock with  
25 each other. The first and second fins 30 and 34 optionally include narrow sealant ribs (not shown) on their outer surfaces to facilitate connecting the fins 30 and 34 to the remainder of the package. To provide tamper evidence, lowermost ends of the first and second fins 30 and 34 are joined to each other along a line of weakness 36 to effectively create a single fin comprised of the first and second fins 30 and 34. The line of weakness 36 may be a scored  
30 line, a perforated line, or a thinned die line and may be severed using a tear strip (not shown).

To open and close the fastener 22, the package 10 is optionally provided with a slider 38 mounted to the fastener 22. The slider 38 disengages the profiles 28 and 32 in response to

movement along the fastener 22 in an opening direction and engages the profiles 28 and 32 in response to movement along the fastener 22 in a closing direction. To accommodate the slider 38 and make it difficult to open the fastener 22 without using the slider 38, the fastener 22 is preferably free of pull flanges extending upwardly from the female and male profiles 28 and 32. To stop movement of the slider 38 near the sides 16 of the package 10 and thereby prevent the slider 38 from sliding off the end of the fastener 22, a pair of end terminations 40 and 42 are mounted to the fastener 22 near the respective sides 16 of the package 10. The end termination 40 stops movement of the slider 38 in the closing direction, while the end termination 42 stops movement of the slider 38 in the opening direction. The end terminations 40 and 42 may be a separate element attached to the fastener 22, as shown in FIG. 1, or may be integrally formed with the fastener 22. Examples of end terminations are disclosed in U.S. Patent Nos. 5,088,971 to Herrington, 5,131,121 to Herrington et al., 5,161,286 to Herrington et al., 5,405,478 to Richardson et al., 5,442,837 to Morgan, 5,448,807 to Herrington, 5,482,375 to Richardson et al., and 5,924,173 to Dobreski et al., which are incorporated herein by reference in their entireties.

The top portion of the package 10 includes a top gusset 44 connecting the fin 30 to the body panel 12. In the absence of a second top gusset below the other fin 34, the fin 34 is directly connected to the body panel 14. The top gusset 44 includes a pair of opposing gusset panels 44a and 44b joined to each other at their lower ends along a fold line 46. The gusset panel 44b extends downward from the fin 30, while the gusset panel 44a extends downward from the body panel 12. As discussed below, in response to filling the package 10 with a bulky food product such as bagels or a loaf of bread, the top gusset 44 expands. In the expanded top gusset 44, the gusset panels 44a and 44b are generally coplanar with each other in a central region between the sides 16 of the package 10. The expanded top gusset 44 allows the package 10 to easily accommodate the bulky food product and, at the same time, provides a display area that can carry graphics for merchandising the food product in the package 10.

FIGS. 3a through 3g depict of method of making the package 10. First, a sheet 50 of thermoplastic material is folded approximately in half along a fold line 52 (FIG. 3a). The sheet 50 is preferably part of a continuous web traveling in a machine direction identified by the arrow in FIG. 3a. The fold line 52 is slightly displaced relative to a center line of the sheet 50 because extra material is required on one side 54 of the sheet to form the top gusset 44 in

FIGS. 1 and 2. An upper section 56 of the side 54 of the folded sheet 50 preferably carries graphics 58 for merchandising the food product to be contained in the packages formed from the plastic sheet 50. Second, this upper section 56 is Z-folded to create the top gusset 44 in FIGS. 1 and 2 (FIGS. 3b and 3c). If the sheet 50 is part of a continuous web, then Z-folding of the upper section 56 is preferably effectuated by a gusset wheel or folding board. Third, a fastener 22 is inserted and sealed between the Z-folded upper section 56 of the side 54 and the other side 60 of the sheet 50 (FIG. 3d). The fastener 22 may be sealed to the exposed edges of the folded sheet 50 using a reciprocating heated seal bar 62 as shown or a stationary convective (hot air) sealer. Fourth, the side 54 of the sheet 50 is slit near the fold line 52 using a knife 64 or the like to create the bottom header 20 in FIGS. 1 and 2 (FIG. 3e).

Fifth, if the packages are provided with respective sliders 38, the sliders 38 are mounted to the fastener 22 at package-width distances apart either before or after the fastener 22 is attached to the folded sheet 50 (FIG. 3f). FIG. 3f depicts the sliders 38 as being installed after the fastener 22 is attached to the sheet 50. To stop movement of the slider 38 near the sides of each package to be formed from the sheet 50, a pair of end terminations 40 and 42 are mounted to the fastener 22 for each package.

Sixth, one or more cylindrical punches 66 form holes in the bottom header 20 (FIG. 3f). Seventh, a reciprocating heated bar/blade 68 seals and cuts the sides 54 and 60 of the folded sheet 50 to each other at package-width distances apart to create the package sides 16 in FIG. 1 (FIG. 3f). The sheet 50 is typically part of a continuous web that intermittently moves in a machine direction transverse to the bar 68. Therefore, after the web is stopped and the bar 68 forms one side 16, the web is moved a package-width distance and briefly stopped again to allow the bar 68 to form the other side. FIG. 3g depicts the finished package 10.

FIG. 4 depicts a stack of finished packages 10 with one of the packages being filled from the open bottom portion 18 with a bulky food product such as a loaf of bread 70. As the package 10 is filled, the top gusset 44 expands to allow the package 10 to better accommodate the bread 70. As best shown in FIG. 2, the opposing body panels 12 and 14 initially are not sealed to each other at the bottom portion 18 so that the package 10 can be filled from the bottom portion 18.

Referring to FIG. 5, after the package 10 is filled, a reciprocating heated bar/blade 72 simultaneously cuts off the bottom header 20 and seals the lower edge of the body panel 12 to



the body panel 14. Instead of cutting off the bottom header 20, the heated bar 72 may be modified to seal the body panels 12 and 14 to each other just above the bottom header 20 and leave the bottom header 20 intact.

FIG. 6 depicts a plurality of filled and sealed packages 10 sitting on a store shelf 72. It can be seen that the food product in each package 10 has expanded its respective top gusset 44 to provide a solid, uninterrupted display area (end panel) that can carry graphics (e.g., a logo) for merchandising the food product in the package. In addition, the expanded top gusset 44 of each filled package 10 generates tension on the fastener 22 to provide the fastener 22 with a distinctive arched appearance. Finally, if the fastener 22 is opened and the tamper-evident line of weakening 36 (FIG. 2) is broken, the expanded top gusset 44 and the fastener 22 cooperate to restrain the food product from accidentally "spilling out" the package opening. The expanded top gusset 44 serves as a blockade against accidental spillage.

FIG. 7 is a sectional view similar to FIG. 2 but showing a reclosable plastic package 80 in accordance with an alternative embodiment of the present invention. Corresponding elements in FIGS. 2 and 7 are identified by the same reference numerals. The package 80 in FIG. 7 is similar to the package 10 in FIG. 2, except that the package 80 includes a second top gusset 82 and a bottom gusset 84. Because of the top gusset 82, the body panel 14 is not directly connected to the fin 34. Rather, the top gusset 82 connects the fin 34 to the body panel 14. The top gusset 82 includes a pair of opposing gusset panels 82a and 82b joined to each other at their lower ends along a fold line 86. The gusset panel 82b extends downward from the fin 34, while the gusset panel 82a extends downward from the body panel 14. In response to filling the package 80 with a bulky food product such as bagels or a loaf of bread, both of the top gussets 44 and 82 expand to accommodate the food product. One or both of the outer surfaces of the expanded gussets 44 and 82 can carry graphics for merchandising the food product in the package 80.

The bottom gusset 84 includes a pair of opposing gusset panels 84a and 84b joined to each other at their upper ends along a fold line 88. Prior to filling and sealing the package 80, one of the body panels 12 and 14 or one of the gusset panels 84a and 84b is extended to form the bottom header 20. In the illustrated embodiment, the bottom header 20 extends from the gusset panel 84a. Once the package 80 is filled with a food product via a fill opening between the body panel 12 and the gusset panel 84a, the body panel and the gusset panel 84a are

sealed to each other and the bottom header 20 is cut away from the package 80. Like the top gussets 44 and 82, the bottom gusset 84 expands in response to filling the package 80 with a bulky food product.

While the present invention has been described with reference to one or more  
5 particular embodiments, those skilled in the art will recognize that many changes may be made thereto without departing from the spirit and scope of the present invention. For example, the top gussets 44 and 82 may be moved upward or downward along the height of the package so long as they are proximate to the fastener 22. Each of these embodiments and obvious variations thereof is contemplated as falling within the spirit and scope of the claimed  
10 invention, which is set forth in the following claims.

**WHAT IS CLAIMED IS:**

1. A reclosable plastic package comprising:  
first and second opposing body panels joined to each other along a pair of sides;  
opposing top and bottom portions bridging the pair of sides;  
5 a reclosable fastener extending along the top portion; and  
a top gusset extending along the top portion and having a pair of opposing gusset  
panels joined to each other at their lower ends along a fold line, one of the gusset panels  
extending downward from the fastener, the other of the gusset panels extending downward  
from the first body panel.
- 10 2. The package of claim 1, wherein the fastener includes first and second  
opposing tracks including respective first and second profiles, the first and second profiles  
being adapted to releasably interlock with each other, the top gusset connecting the first track  
to the first body panel.
3. The package of claim 2, wherein the one of the gusset panels extends  
15 downward from the first track, and the other of the gusset panels extends downward from the  
first body panel.
4. The package of claim 3, wherein the first track includes a first fin extending  
downward from the first track, the one of the gusset panels extending downward from the  
first fin.
- 20 5. The package of claim 2, wherein the second body panel is directly connected  
to the second track.
6. The package of claim 1, wherein the top gusset expands in response to filling  
the package with a bulky food product.
7. The package of claim 6, wherein the expanded top gusset carries graphics for  
25 merchandising the food product.
8. The package of claim 1, further including a second top gusset extending along  
the top portion and having a pair of opposing second gusset panels joined to each other at  
their lower ends along a second fold line, one of the second gusset panels extending  
downward from the fastener, the other of the gusset panels extending downward from the  
30 second body panel.
9. The package of claim 8, wherein the fastener includes first and second  
opposing tracks including respective first and second profiles, the first and second profiles

being adapted to releasably interlock with each other, the second top gusset connecting the second track to the second body panel.

10. The package of claim 9, wherein the one of the second gusset panels extends downward from the second track, and the other of the second gusset panels extends  
5 downward from the second body panel.

11. The package of claim 10, wherein the second track includes a second fin extending downward from the second profile, the one of the second gusset panels extending downward from the second fin.

12. The package of claim 1, wherein the package is convertible between a pre-filled condition and a post-filled condition, the bottom portion being unsealed in the pre-filled condition and sealed in the post-filled condition.  
10

13. The package of claim 1, wherein the bottom portion includes a bottom header having one or more holes for mounting the package to dispensing posts.

14. The package of claim 1, wherein the bottom portion includes a bottom gusset.  
15 15. A reclosable plastic package convertible between a pre-filled condition and a post-filled condition, comprising:

first and second opposing body panels joined to each other along a pair of sides;  
opposing top and bottom portions bridging the pair of sides;  
a reclosable fastener extending along the top portion; and

- 20 a top gusset extending along the top portion and having a pair of opposing gusset panels joined to each other at their lower ends along a fold line, one of the gusset panels extending from the fastener, the other of the gusset panels extending from the first body panel;

wherein in the pre-filled condition, the bottom portion includes a fill opening allowing  
25 a food product to be inserted into package; and

wherein in the post-filled condition, the fill opening is sealed and the top gusset expands to accommodate the food product.

16. The package of claim 15, wherein the expanded top gusset in the post-filled condition carries graphics for merchandising the food product.

- 30 17. The package of claim 15, wherein the fastener is arched away from the expanded top gusset when the package is in the post-filled condition.

18. The package of claim 15, wherein the fastener includes first and second opposing tracks including respective first and second profiles, the first and second profiles being adapted to releasably interlock with each other, the top gusset connecting the first track to the first body panel.

5 19. The package of claim 18, wherein the one of the gusset panels extends downward from the first track, and the other of the gusset panels extends downward from the first body panel.

20. A method of merchandising a food product, comprising:  
providing a package including first and second opposing body panels joined to each  
10 other along a pair of sides, opposing top and bottom portions bridging the pair of sides, a reclosable fastener extending along the top portion, and a top gusset extending along the top portion and having a pair of opposing gusset panels joined to each other at their lower ends along a fold line, one of the gusset panels extending downward from the fastener, the other of the gusset panels extending downward from the first body panel;

15 inserting a food product into the package via a fill opening in the package such that the food product causes the top gusset to expand; and  
sealing the fill opening.

21. The method of claim 20, wherein the fill opening is disposed at the bottom portion of the package.

20 22. The method of claim 20, further including the step of providing the top gusset with graphics for merchandising the food product, the graphics being viewable when the top gusset expands.

23. The method of claim 22, wherein the step of inserting a food product into the package causes the fastener to be arched away from the expanded top gusset.

25 24. The method of claim 23, further including the step of placing the package on a store shelf with the top gusset below the arched fastener.

25. The package of claim 1, further including a slider slidably mounted to the reclosable fastener for opening and closing the fastener in response to movement therealong.

26. A reclosable plastic package comprising:  
30 a pair of opposing body panels joined along a pair of sides and a bottom portion bridging the sides;

a top gusset formed by a plurality of gusset panels and joining the body panels to each other, the top gusset opposing the bottom portion and bridging the sides, the top gusset including at least a pair of peaks and a valley between the peaks; and  
a reclosable fastener extending along one of the peaks.

5           27.    The package of claim 26, further including a slider slidably mounted to the fastener for opening and closing the fastener in response to movement therealong.

          28.    The package of claim 26, wherein the peaks are offset such that one of the peaks extends above the other of the peaks.

          29.    The package of claim 28, wherein the fastener extends along the one of the  
10 peaks that extends above the other of the peaks.

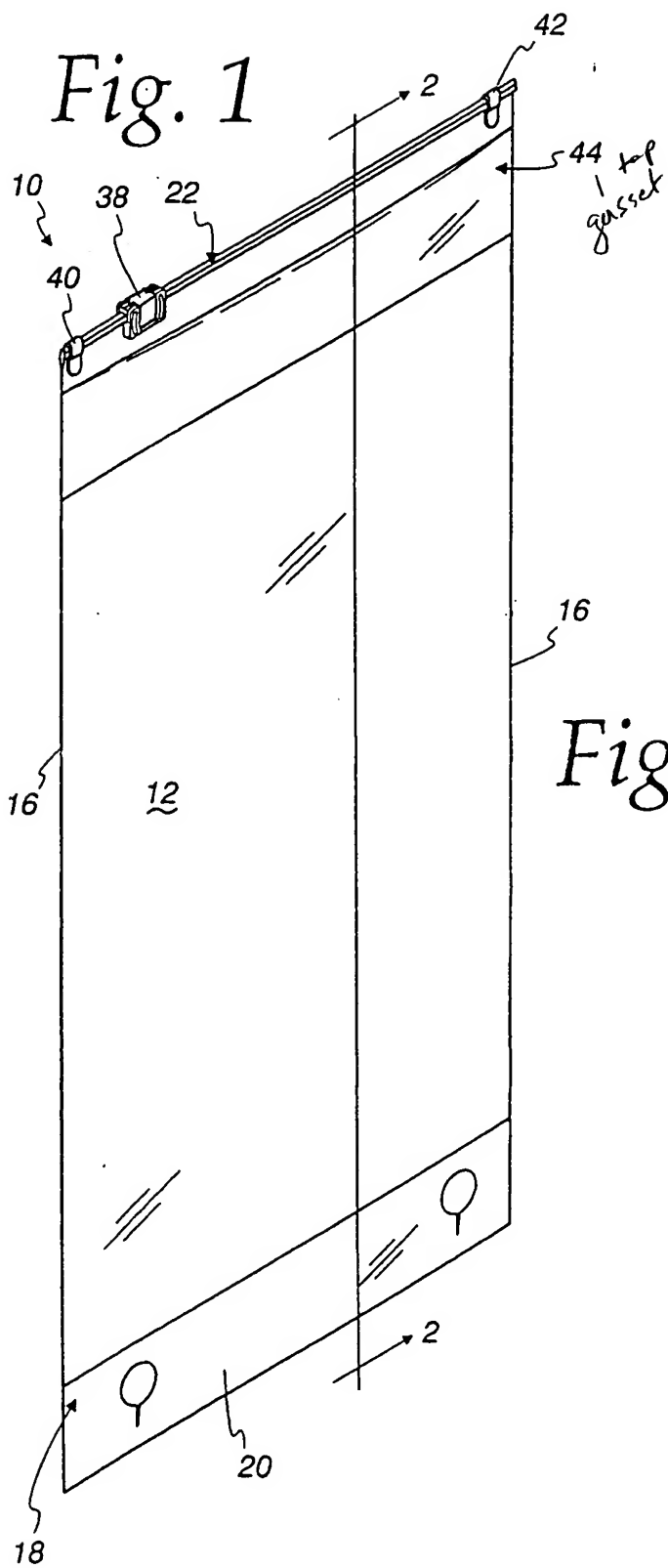
          30.    The package of claim 26, wherein the bottom portion includes a fill opening to allow the package to be filled with a product via the fill opening.

          31.    The package of claim 30, wherein the bottom portion includes a bottom  
gusset.

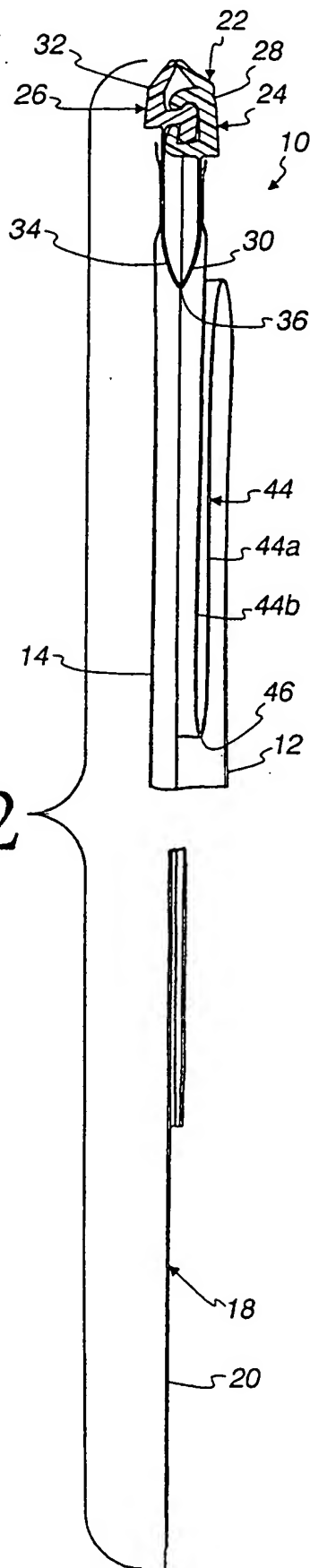
15           32.    The package of claim 26, wherein the fastener includes a pair of interlocking profiles and fins extending from the respective profiles, the fins being joined to each other along a breakable area of weakness.

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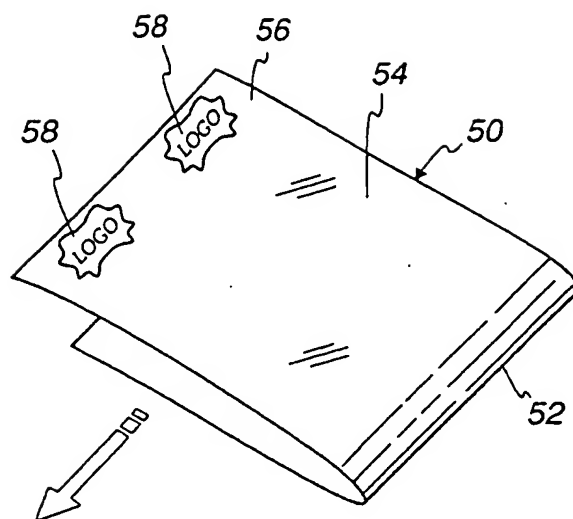


*Fig. 2*

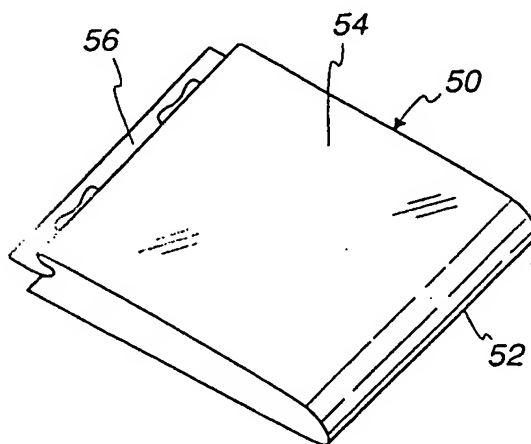


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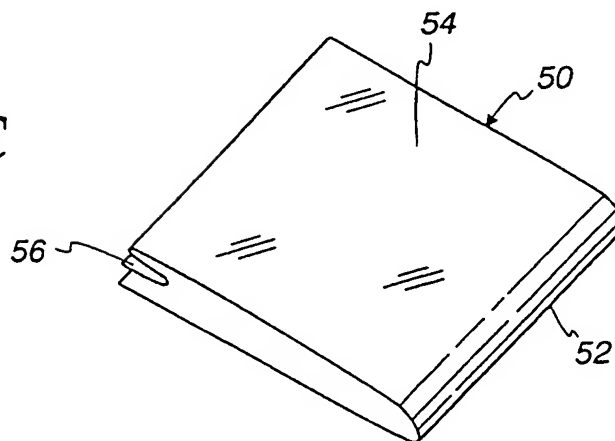
*Fig. 3a*



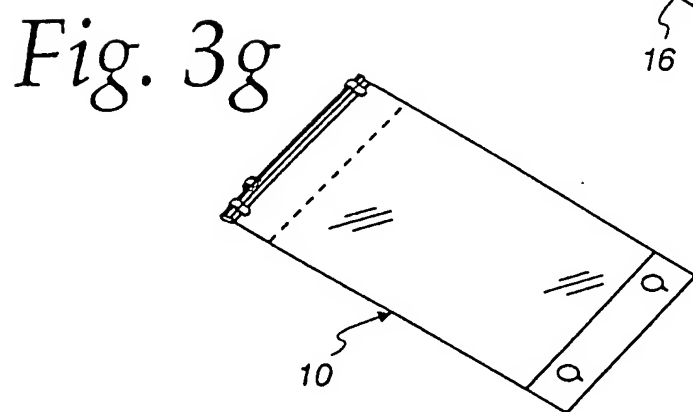
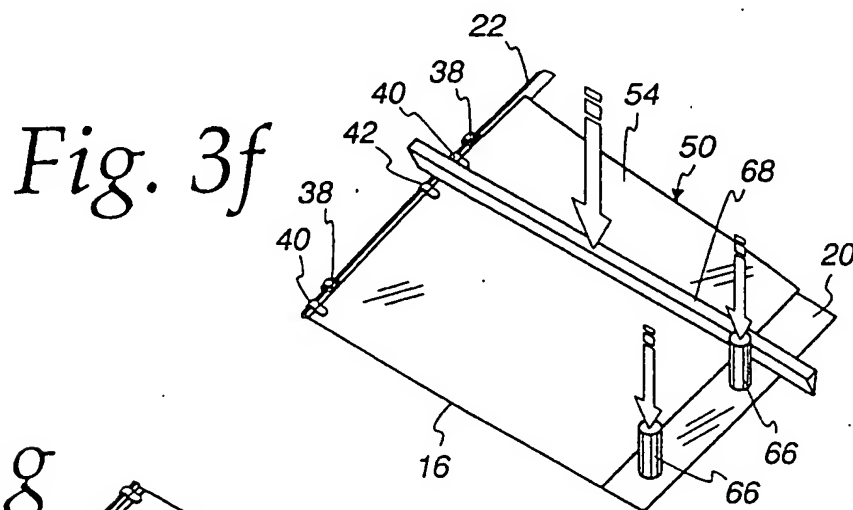
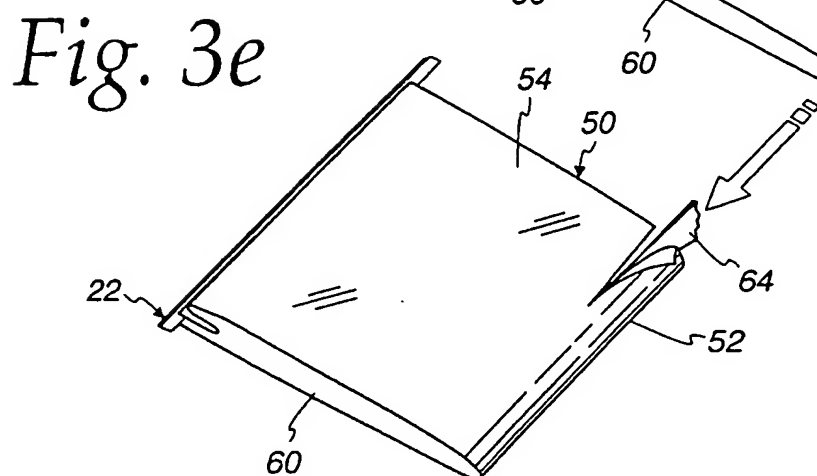
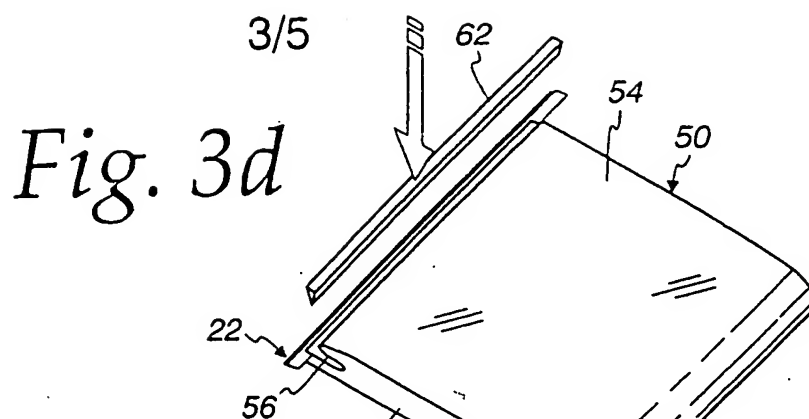
*Fig. 3b*

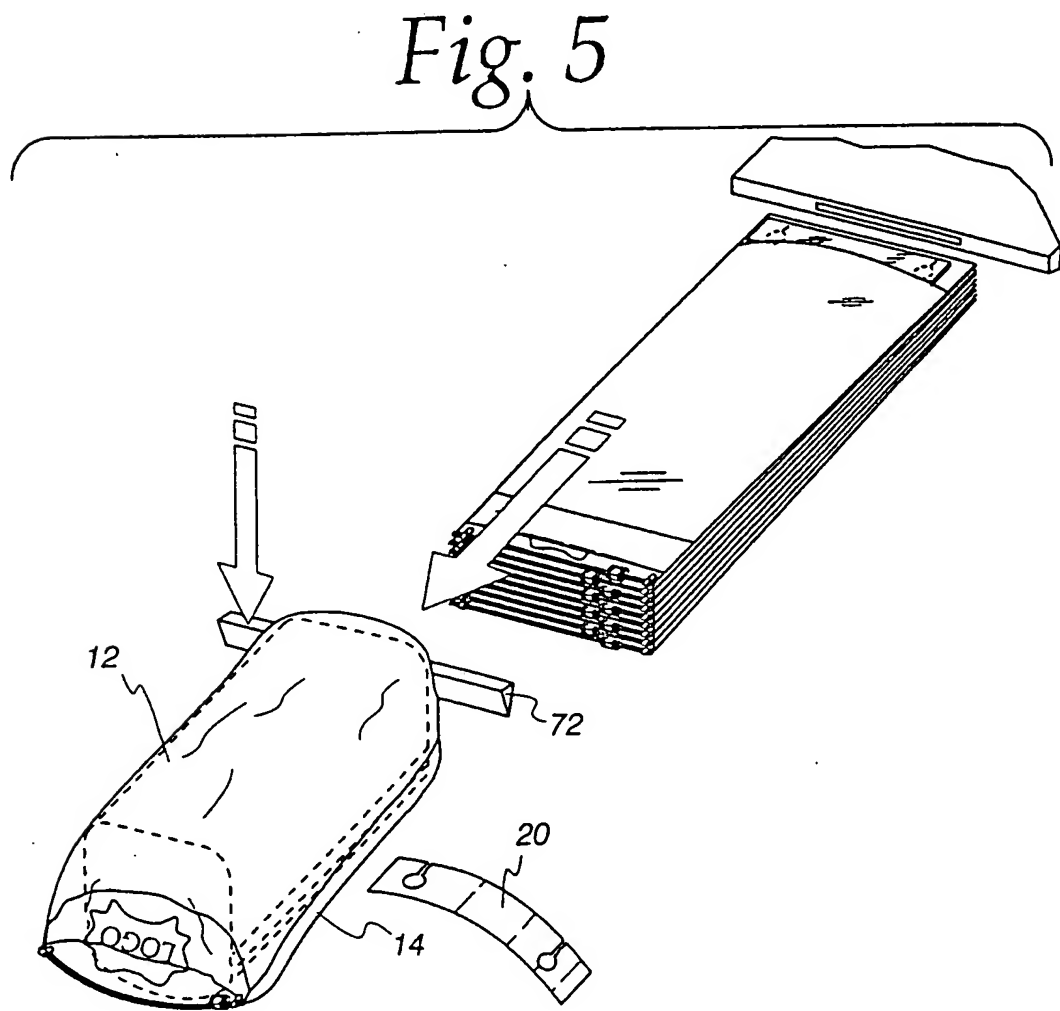
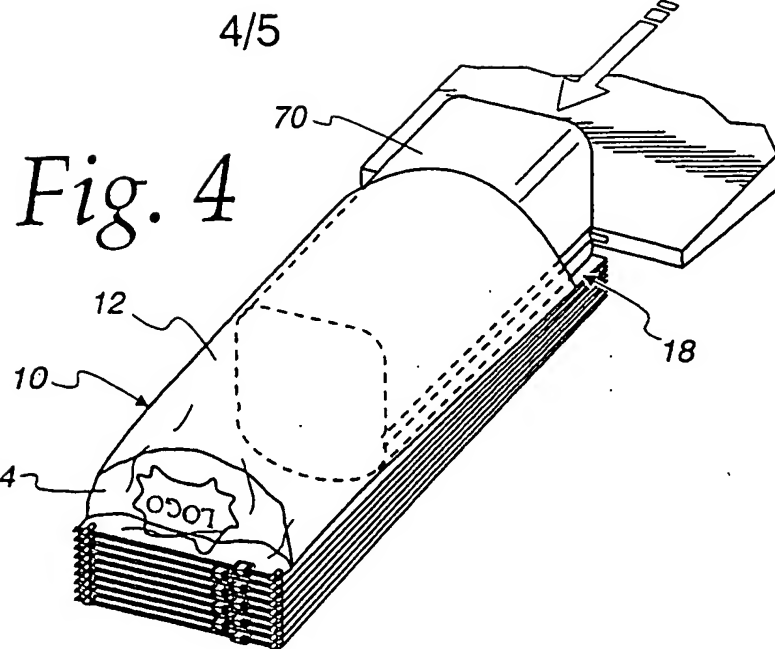


*Fig. 3c*









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Fig. 6

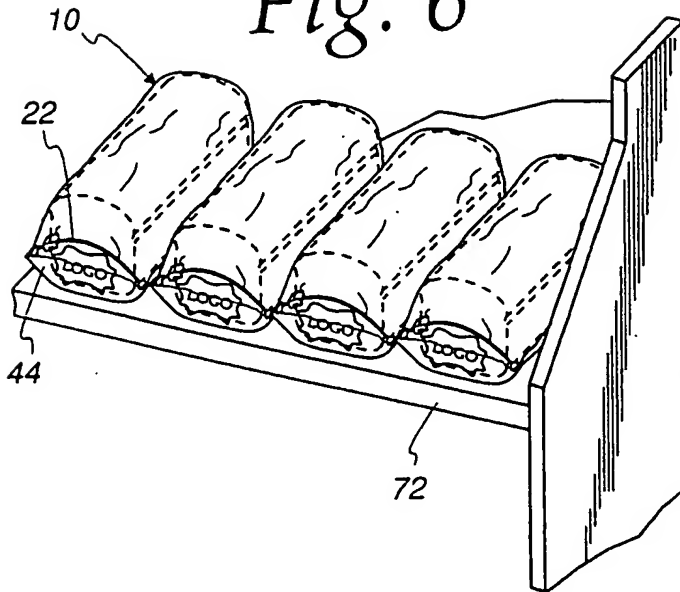


Fig. 7

